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(71) Applicant (for all designated States except US): **CODA THERAPEUTICS LIMITED** [NZ/NZ]; 3/4 Crescent Road, Epsom, Auckland 1003 (NZ).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GREEN, Colin, R.** [NZ/NZ]; 3/4 Crescent Road, Epsom, Auckland 1003 (NZ).
BECKER, David, L. [GB/GB]; 19 Lapwing Way, Abbots, Langley, Hertfordshire (GB).

(74) Agents: **ROQUES, Sarah, Elizabeth** et al.; J.A. Kemp & Co., 14 South Square, Gray's Inn, London WC1R 5JJ (GB).

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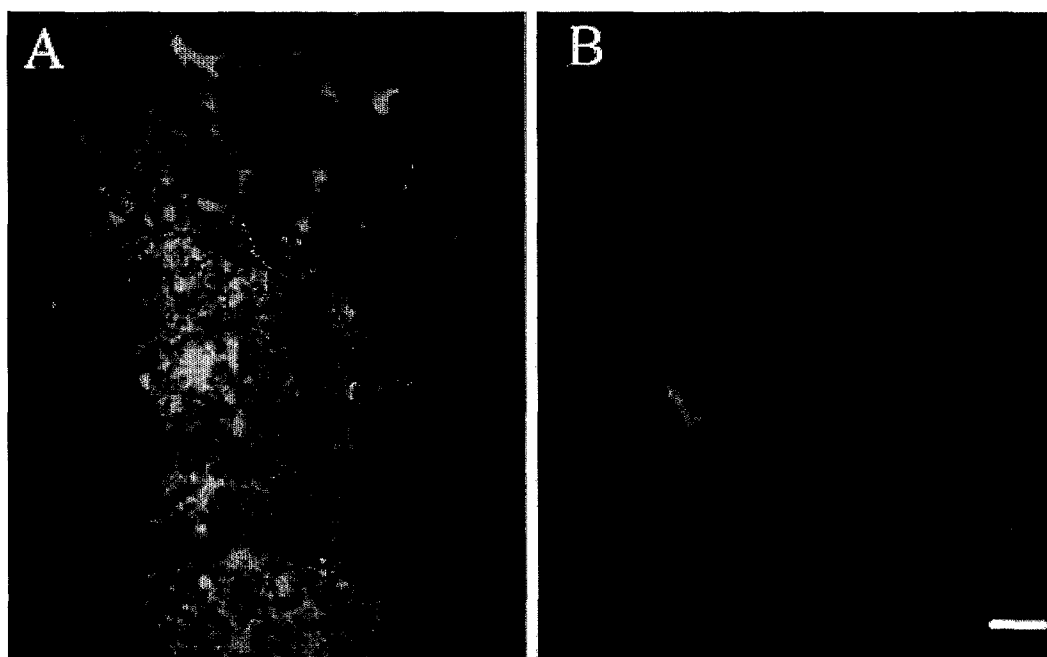
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[Continued on next page]

(54) Title: ANTI-CONNEXIN COMPOUNDS AND THERAPEUTIC USES THEREOF



(57) Abstract: Methods and compositions for modulating the activities of connexins are provided, including, for example, for use for treatment of cardiovascular, vascular, neurological, for wounds and for other indications. These compounds and methods can be used therapeutically, for example, to reduce the severity of adverse effects associated diseases and disorders where localized disruption in direct cell-cell communication or prevention of hemichannel opening is desirable.

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- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*
- *with sequence listing part of description published separately in electronic form and available upon request from the International Bureau*

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61K38/08 A61K38/10 C12N15/11 A61K31/70 A61P9/10
 A61P29/00 A61P17/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, Sequence Search, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| X | WO 03/032964 A (UNIV WALES COLLEGE OF MEDICINE [GB]; TUDOR MORLEY GRIFFITH [GB]) 24 April 2003 (2003-04-24) | 1,2, 4-18,20, 21,28, 36,38, 51,52, 71,75 |
| Y | see claims 14-16, page 8 lines 20-27, page 12 lines 1-7 | 1,4-6, 8-18, 23-25, 28-34, 36-38, 48-52, 54-69, 71,75 |

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *A* document defining the general state of the art which is not considered to be of particular relevance | *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| *E* earlier document but published on or after the international filing date | *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. |
| *O* document referring to an oral disclosure, use, exhibition or other means | *&* document member of the same patent family |
| *P* document published prior to the international filing date but later than the priority date claimed | |

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| Date of the actual completion of the international search 24 April 2008 | Date of mailing of the international search report 13/05/2008 |
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| Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | Authorized officer Merckling-Ruiz, V |
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INTERNATIONAL SEARCH REPORT

International application No

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| Y | <p>QIU C ET AL: "Targeting Connexin43 Expression Accelerates the Rate of Wound Repair" CURRENT BIOLOGY, CURRENT SCIENCE,, GB, vol. 13, no. 19, 30 September 2003 (2003-09-30), pages 1697-1703, XP004545249 ISSN: 0960-9822 cited in the application see abstract, page 1697 right col., page 1702</p> | 2,4-7, 10-18,51 |
| E | <p>WO 2006/069181 A (MUSC FOUND FOR RES DEV [US]; GOURDIE ROBERT [US]; GHATNEKAR GAUTAM [US] 29 June 2006 (2006-06-29)</p> <p>see Seq.71-74, claims 1-5 and 42, examples 1-4</p> | 1,2,4-6, 8-28, 36-38, 51-69, 71,75 |
| A | <p>EVANS W. AND BOITANO S.: "Connexin mimetic peptides : specific inhibitors of gap-junctional intercellular communication." BIOCHEMICAL SOCIETY TRANSACTIONS., vol. 29, no. 4, August 2001 (2001-08), pages 606-612, XP009089596 see the whole document</p> | 1,2, 4-34, 36-38, 48-69, 71,75 |
| Y | <p>OVIEDO-ORTA E ET AL: "Gap junctions and connexin-mediated communication in the immune system" BIOCHIMICA ET BIOPHYSICA ACTA. BIOMEMBRANES, AMSTERDAM, NL, vol. 1662, no. 1-2, 23 March 2004 (2004-03-23), pages 102-112, XP004498631 ISSN: 0005-2736 see abstract, pages 106-107</p> | 1,2,4-6, 8-18, 23-25, 28-34, 36-38, 48-52, 54-69, 71,75 |
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INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2006/001961

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| Y | WO 00/44409 A (UNIV LONDON [GB]; BECKER DAVID LAURENCE [GB]; GREEN COLIN RICHARD [NZ]) 3 August 2000 (2000-08-03) cited in the application see claims and abstract ----- | 1,2, 4-18, 23-25, 28-34, 36-38, 48-52, 54-69, 71,75 |
| P,X | WO 2005/053600 A (CODA THERAPEUTICS NZ LTD [NZ]; LAUX WILDA [NZ]; GREEN COLIN R [NZ]) 16 June 2005 (2005-06-16) see claims 1-4, 22 and 57, Sequences 12-31, page 24 lines 4-14, pages 17-18 ----- | 2,4,5,7, 51 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2006/001961

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

1,2,4-34 (part), 36-38 (part), 48-69 (part), 71 (part), 75 (part)
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,4-6 (part), 8-34 (part), 36-38 (part), 48-69 (part),
71 (part), 75 (part)

Use of peptide mimetic anti-connexin compounds in the treatment of vascular disorders

2. claims: 1, 4-5 (part), 7-34 (part), 35, 36-38 (part), 39-47,
48-69 (part), 71 (part), 75 (part)

Use of antisense anti-connexin compounds in the treatment of vascular disorders

3. claims: 2, 4-7 (part), 10-18 (part), 51 (part), 70, 71 (part),
76

Use of an anti-connexin compound in the treatment of inflammatory disorders

4. claims: 3, 4-7 (part), 10-18 (part), 51 (part), 71-72 (part), 77

Use of an anti-connexin compound in the treatment of edema associated to graft or transplant

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2006/001961

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